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DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The invention listed below is owned by an agency of the U.S. Government and is available for licensing to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

FOR FURTHER INFORMATION CONTACT: Dawn Taylor-Mulneix at 301-767-5189, or *dawn.taylor-mulneix@nih.gov.* Licensing information may be obtained by communicating with the Technology Transfer and Intellectual Property Office, National Institute of Allergy and Infectious Diseases (NIAID), 5601 Fishers Lane, Rockville, MD 20852; tel. 301-496-2644. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished information related to the invention.

SUPPLEMENTARY INFORMATION: Technology description follows:

Human lgA monoclonal antibody that targets a conserved site on the Plasmodium falciparum circumsporozoite protein.

Description of Technology:

Scientists at NIAID have isolated MAD2-6, an IgA antibody active against *Plasmodium falciparum* sporozoites, the infectious agent of malaria. In 2019, the majority of the 229 million cases resulted from *P. falciparum* infections. Because *P. falciparum* has a complex lifecycle during human infection, most advanced malaria vaccine candidates and current chemoprophylaxis drugs can confer only partial, short-

term protection in malaria-endemic areas. Thus, the MAD2-6 antibody could be used alone or in combination with current technology.

MAD2-6 binds to a unique epitope overlapping with region I, a functionally important region of the *Plasmodium falciparum* circumsporozoite protein (PfCSP). This binding site of PfCSP is a previously unknown target for protective antibodies, which may be useful as a new target. Monoclonal antibodies are promising tools for prevention of malaria and could replace or be combined with malaria chemoprevention in areas with seasonal malaria.

This technology is available for licensing for commercial development in accordance with 35 U.S.C. 209 and 37 CFR part 404, as well as for further development and evaluation under a research collaboration.

Potential Commercial Applications:

- Alternate technologies are required to address drug resistance
- A multi-targeted approach can combat all stages of the parasite life-cycle
- Prophylactic treatment for neutralization of *P. falciparum* in normal or at-risk populations including pregnant women

Competitive Advantages:

- Antibodies can be effective as prophylactics, alone or in combination with other treatments

Development Stage:

- Pre-Clinical

Inventors: Joshua Tan Ph.D., Peter Crompton M.D., Robert Seder M.D., Hyeseon Cho Ph.D., all of NIAID.

Publications: Tan, J., et al., "Functional human IgA targets a conserved site on malaria sporozoites", *Science Translational Medicine,* Vol. 13(599), 23 June 2021. https://doi.org/10.1126/scitranslmed.abg2344

Intellectual Property: HHS Reference No. E-130-2020-0-PCT-02—PCT Application No. PCT/US2021/037571 filed on 6 June 2021.

Licensing Contact: To license this technology, please contact Dawn Taylor-Mulneix at 301-767-5189, or *dawn.taylor-mulneix@nih.gov*, and reference E-130-2020.

Collaborative Research Opportunity: The National Institute of Allergy and Infectious Diseases is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate or commercialize this technology. For collaboration opportunities, please contact Dawn Taylor-Mulneix at 301-767-5189, or *dawn.taylor-mulneix@nih.gov.*

Date: June 3, 2022.

Surekha Vathyam,

Deputy Director,

Technology Transfer and Intellectual Property Office,

National Institute of Allergy and Infectious Diseases.

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